

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

Claims 3, 4, 7, and 8 are pending in this application. Claims 1, 2, 5, and 6 have been canceled without prejudice or disclaimer. Claims 1 and 7 are currently amended to more clearly indicate the historical nature of the display of the program including the detected anomalous step along with reset as an initial program step, all without the introduction of any new matter. See page 19, lines 3-27 and page 13, lines 8-10, for example.

The outstanding Office Action includes a rejection of Claims 1-4, 7, and 8 under 35 U.S.C. §103(a) as being unpatentable over Bauer et al. (U.S. Patent No. 4,535,456, Bauer) in view of Sadre et al. (U.S. Patent No. 5,485,620, Sadre).

REQUEST FOR WITHDRAWAL OF IMPROPER ACTION FINALITY

The outstanding Office Action has been improperly made final because the new ground of rejection relying on Bauer in view of Sadre under 35 U.S.C. §103(a), instead of the prior 35 U.S.C. §102(b) rejection based upon Sadre alone, was not necessitated by the Amendment filed July, 25, 2003, because that Amendment simply corrected "reference" to --standard-- in Claims 1 and 7 in response to the lack of antecedent basis objection in the Office Action mailed April 28, 2003.

Accordingly, as the new ground of rejection was not necessitated by the above-noted Amendment correction of "reference" to --standard--, withdrawal of the indicated finality of the present outstanding Office Action is believed to be in order and respectfully requested.

REJECTION ARGUMENTS

Before turning to the outstanding obviousness rejection relying on Bauer in view of Sadre, it is believed that a brief review of the present invention would be helpful.

In this regard, the present invention is concerned with a monitor apparatus for a sequential-function-chart-type programmable controller that has a reference-active-time memory unit that stores a standard value of an active time of performing an arbitrary step in a sequential-function-chart program. The monitor apparatus further includes at least a timer for measuring the actual active time of the arbitrary step and an anomalous-state monitoring unit which detects an anomalous state of the arbitrary step through comparison between the active time measured by the timer and the standard value stored in the reference-active-time memory unit.

The present invention further provides an advantageous display of the program in such a manner that steps which have been executed are distinguished from steps which have not yet been executed as well as from any anomalous state step. This display of differentiated steps is then able to function to effectively indicate a history or path up to the step detected to be in an anomalous state. This history or path up to the step detected to be in an anomalous state is reset during an initial step of the sequential-function-chart program so that new paths/histories can be displayed.

Turning to the outstanding rejection of Claims 1-4, 7, and 8 over Bauer in view of Sadre, it is first noted that the cancellation of Claims 1 and 2 renders the rejection of Claims 1 and as being unpatentable over Bauer in view of Sadre moot.

With regard to the only remaining independent Claims 3 and 7, Claim 3 has been rewritten in independent form to include the limitations of base Claim 1 and intervening Claim 2 and both independent Claims 3 and 7 have been amended to clarify that the program

is displayed “in such a manner that a step or steps which have been executed are distinguished from a step or steps which have not yet been executed” and that this “history or path up to the step detected to be in an anomalous state” will be “reset only during an initial step of the sequential-function-chart program.”

Col. 6, line 53-col. 7, line 2 of Bauer states the following:

The output 3.2 remains SET until the output 3.3 of the subsequent instruction is enabled by placement in SET status. At that time, the output 3.2 must be immediately RESET. The RESET command 26 is stored in memory address 0014 and 0015, and causes resetting of the output — operator RA— as soon as the output 3.3 of the subsequent step is SET, as indicated by operator UA, which of course, corresponds to the same operator as step 24. The reset command of the output 3.2, operator RA, is structured in the same way as the reset command RA of 22, of which only the last instruction is shown.

Thus, when a next step is SET, the former is RESET. Therefore, following the express teachings and reasonable suggestions of Bauer means that the history or path up to an anomalous step (a step that has caused an anomalous state) cannot be found relative to program having selective branches.

Similarly, Sadre is not concerned with a history or path indication. Thus, while Sadre discloses that each button for manual manipulation by the user is displayed with an active, inactive, ready, or error color, and that a time tag is recorded with each frame for playback to see what I/O conditions or program conditions may have caused the programming problem or fault, Sadre also teaches that the event handler only keeps the newest events while discarding older ones. See col. 24, lines 49-53 of Sadre.

Therefore, neither Bauer nor Sadre can be said to reasonably teach or fairly suggest the subject matter of independent Claims 3 and 7 as to a display that indicates a history or path up to the step detected to be in an anomalous state, much less that this history or path up to the step detected to be in an anomalous state is reset only during an initial step of the

sequential-function-chart program.

Consequently, the base independent Claims 3 and 7 requirements for the detection of an arbitrary step as being anomalous by comparing active time with a standard value along with the display of the states of the sequential steps that differentiates these states in a manner that a history or path is formed that is only reset at an initial program step are not taught or suggested by Bauer and/or Sadre considered alone or together in any proper combination. Therefore, the rejection of base independent Claims 3 and 7 is respectfully submitted to be improper and should be withdrawn.

Moreover, as Claim 4 depends on Claim 3 while Claim 8 depends on Claim 7, these dependent claims clearly define patentably over Bauer and/or Sadre considered alone or together in any proper combination for the same reasons their respective independent base claim does. In addition, Claims 4 and 8 add further features to those of their respective independent base claim features that are also not taught or suggested by Bauer and/or Sadre considered alone or together in any proper combination. Accordingly, dependent Claims 4 and 8 are considered to patentably define there over for this reason as well.

